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Immethodology of Developing Students of Special Competences in Physics through Electronic Educational Resources

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Annotation:

The article deals with the need for future physics teachers to develop special competencies in physics through electronic educational resources mastering the whole set of knowledge, skills and abilities to form training in physics. be able to use the basics of knowledge in physics correctly and purposefully; it is emphasized that they are the basic qualities that determine the perfection of a person.

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In our country, special attention is paid to the organization of the educational process in accordance with modern requirements, including the systematic approach to preparing students for professional activities in higher education, integration of educational content, introduction of advanced pedagogical and information and communication technologies, training of highly qualified personnel.

The Action Strategy for the Further Development of the Republic of Uzbekistan identifies as an important priority "further improvement of the system of continuing education, increasing the capacity of quality educational services, continuing the policy of training highly qualified personnel in accordance with modern needs of the labor market". This requires the development of special competencies of future professionals in higher education through electronic educational resources.

The set of competencies is a holistic basis of pedagogical and professional activity, an integrative indicator of professional skills, a set of mental, axiological, cognitive, operational and other features that characterize the social status of the specialist.

The concept of "competence" has entered the field of education as a result of psychological research.

From a psychological point of view, competence means "having a plan of action in unconventional situations, how a specialist behaves in unexpected situations, communicates, takes a new approach in dealing with competitors, performs vague tasks, uses conflicting information, and develops in coherent and complex processes".

Professional competence implies the acquisition of integrative knowledge and actions in each independent direction, rather than the acquisition of individual knowledge and skills by a specialist. Competence also requires the constant enrichment of professional knowledge, the ability to learn new information, to understand important social requirements, to be able to search for new information, process it and apply it in their work.

Professionally competent specialist:

- Consistently enriches their knowledge;
- learns new information;
- deeply understands the requirements of the time;
- seeks new knowledge;
- processes them and uses them effectively in their practical activities.

At each stage of the process of training qualified personnel, the tasks to be performed in order to effectively organize education and raise it to a higher level of quality are analyzed. Based on the analysis, the development and implementation of modern methods and forms of improving the quality of education, the use of modern educational technologies in order to accelerate the development of special competencies of future physics teachers in higher education through the use of electronic educational resources, its content and effectiveness in teaching Effective ways of identifying the sequence, compiling problem-based tasks and preparing methodological recommendations and instructions based on them, and conveying them to young people due to the sharp increase in information will be developed.

Prospective physics teachers will also develop their thinking in the process of acquiring the basics of knowledge in the educational process. They are the realization of the needs and capabilities of the individual on the basis of clear plans and programs, methods, clear physical concepts that play an effective role in the independent activity of the individual, the laws of physics and instructions for their use, mastering all the knowledge, skills and abilities regardless of which field he chooses, he is able to prepare for physics at the level of need, to use the basics of physics knowledge correctly and purposefully. They represent the basic qualities that determine a person's perfection.

The concept of professional flexibility is also an element of the pedagogical competency approach. It should be noted that one of the most important aspects of young professionals starting their careers is professional flexibility and professional skills.

Competence is a new quality of professional training, competence is a person's knowledge that is fast and communicative, constantly updated. Competence consists of meaningful (knowledge) and professional (skills) components, and the choice of the most optimal solution implies critical thinking to justify the choice.

In general, the development of special competencies of future teachers through electronic educational resources under the influence of many socio-political, national-spiritual, psychological and pedagogical factors requires the teacher to organize this process with the help of innovative technologies.

In the development of special competencies of the future physics teacher in higher education institutions through the use of electronic educational resources to provide relevant knowledge and guidance on methods of teaching and problem solving, laboratory work, application of pedagogical and information technologies, selection of teaching methods depending on the subject and content, advanced methodological experience acquaintance with others is important.

They should learn the secrets of physics teaching methods, effective and optimal ways to acquire knowledge, skills and abilities in this subject, work with its program, analyze it, distribute the content of science by hours and have methodological guidelines for teaching it.

The development of special competencies in future physics teachers through e-learning resources highlights the need to use issues of a practical and non-standard nature in the educational process to form the basic competencies to increase interest in physics. Solving such problems develops future physics teachers in logical observation activities such as analysis, generalization, deduction, and induction, and traits such as intuition flexibility and adaptability, and teaches future physics teachers to think critically about the results obtained.

Often, the solution of problems of a practical and non-standard nature is not found immediately, but only after several attempts, which allows the individual to strive to achieve this goal, that is, to acquire very important qualities such as willpower. and most importantly, the beauty of the solution as well as the fact that the solution of such problems has resulted in future physics teachers. and the great emotional pleasure associated with not being traditional is of great importance.

Dealing with interesting and non-standard issues allows future physics teachers to deepen their knowledge of the science, to repeat previously learned concepts. and allowed them to master familiar algorithms in an unusual, fun way. Improving the methodological training of future physics teachers The development of special competencies through electronic educational resources to effectively achieve the underlying competencies. led to the realization of their unique talents.

The development of special competencies of future physics teachers through electronic educational resources depends on such issues as forecasting the educational process, technological design, organization, motivation, control and evaluation of results, creative approach to the social formation of content.

Methodological training stages for future physics teachers will be improved to develop special competencies through electronic educational resources.

Modernization of approaches to teaching physics should be ensured by the introduction of modern teaching technologies. These include computer modeling and data analysis, tablet, computer-based technology, learning. working in small groups, collaborative technology in learning, classroom technology, design. and the use of research methodologies in the teaching process is recommended.

In the context of physics, it is necessary to take into account the development trends of modern scientific knowledge, consisting of a sharp increase in the volume of modern scientific knowledge in

the field of elementary particle physics, quantum, nuclear and thermonuclear physics.

The methodology of developing students' special competencies in physics through electronic educational resources defines the learning objectives, which consist of the acquisition of relevant competencies by students. Objectives define learning objectives. Based on the tasks, a block will be built, which will be organized on the principle of modules, information-educational environment and forms of organization of lessons, combining the content of training aimed at the practical acquisition of knowledge. It is this block that defines the activity and interaction between teacher and student. Current and final control measures allow to check the compliance of the student's knowledge and skills with the requirements.

The method of developing students' special competencies in physics through electronic educational resources is to select and systematize the content of teaching in physics in the creation of electronic educational resources, to determine the forms of organization. In it, the definition of science textbooks, the development of a thematic plan of a special course, which includes methodological recommendations for each class, will be the basis for solving the problem of choosing the content of the course.

For example, the laboratory work of the modules of the optics department of physics has a frontal character and is carried out individually by each student. The purpose of the work for students in the conduct of classes, the equipment used and instructions should be provided, including a list of materials, a description of the work procedure, and a brief theoretical material. Each student will receive a job that is different from other students' work on topics in the optics department. The list of topics is randomly distributed.

Development of digital images of subjects in the creation of electronic educational resources in physics, photography of school posters in physics and processing, scanning images from school textbooks. and processing, as well as creating drawings for physics problems in a graphics editor using layer technology.

The first stage in the creation of e-learning resources in physics created by students is a pedagogical project. The purpose of e-learning resources and tasks are identified, then the curriculum is selected and a thematic plan of the lesson is developed. In this example:

- 1) The objective is the focal length of the lens. Build images given by a thin lens.
- 2) Obtain images using a lab work link.
- 3) The optical power of the line. Optical devices.

Developing e-learning resources includes the following for each course:

- 1) definition of educational purposes, solution of educational problems;
- 2) structure modeling;
- 3) determine the content of the slides.

Objective: To teach students lenses, convex and other lenses, the focal length of the lens, the optical axis of the lens, effective solid and imaginary images; imaging technology, should learn the concepts

of thin lens. Repeating the law of refraction of light, introducing students to the concept of lens, convex and to introduce the concepts and differences between the concave and the convex, the optical axis of the lens and the focal length of the lens, a step-by-step description of the technology of creating an image given by a thin neck.

In the next stage, students begin to develop their own media components. In developing media components, the student project team works together, assists the programmer in implementing the scenario, and provides methodology for e-learning resources in physics and make adjustments to ensure compliance with technical requirements. After that, the student-programmer is engaged in error correction and program polishing, develops methodological recommendations for the use of e-learning course.

The methodology of developing special competencies in physics in students through electronic educational resources requires determining the maximum number of errors, intensive use of resources to eliminate it. The final presentation of the project results is made to the student-teacher who has created electronic educational resources.

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